

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	Cullen F. Jennings
Serial No.:	10/634,668
Filing Date:	August 5, 2003
Group Art Unit:	2618
Examiner:	Eugene Yun
Confirmation No.:	7154
Title:	SIGNAL DETECTION USING PROBABILISTIC TECHNIQUES

Mail Stop AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

PRE-APPEAL BRIEF REQUEST FOR REVIEW

The following Pre-Appeal Brief Request for Review ("Request") is filed in accordance with the provisions set forth in the Official Gazette Notice of July 12, 2005 ("OG Notice"). Pursuant to the OG Notice, this Request is being filed concurrently with a Notice of Appeal. The Applicant respectfully requests reconsideration of the Application in light of the remarks set forth below.

REMARKS

Applicant contends that the rejections of Claims 1-28 contain clear legal and factual deficiencies, as described below. In the Final Office Action dated January 3, 2007 (“*Final Office Action*”) and the Advisory Action dated March 15, 2007 (“*Advisory Action*”), the Examiner rejected Claims 1-28 under 35 U.S.C. § 102(b) as anticipated by U.S. Patent No. 5,809,133 issued Bartkowiak et al. (“*Bartkowiak*”).

Bartkowiak describes a modified Goertzel DFT algorithm that is fundamentally different than the invention specified by Applicant’s claims. Because of this fundamental difference, the rejection is fraught with problems (as shown below) that result from the Examiner’s attempt to shoehorn the claims into this reference. Applicant respectfully requests a finding that these rejections are improper and an allowance of Claims 1-28.

Independent Claim 1 is allowable because *Bartkowiak* does not describe, expressly or inherently, each and every limitation of the claim. *Bartkowiak* fails to teach at least (1) determining a set of particles each modeling a potential signal and (2) redistributing the particles within a space of potential signals that may be generated by the transmitter.

1. *Bartkowiak* fails to teach “determining a set of particles each modeling a potential signal,” as required by Claim 1.

As teaching these claimed aspects, the Examiner points to *Bartkowiak*, column 3, lines 26-36, which states that “the DTMF detector receives a plurality of digital samples of a received signal.” *Final Office Action*, p. 2; *Bartkowiak*, col. 3, ll. 26-27. The Examiner explains by asserting that the claimed “particles” are allegedly taught by *Bartkowiak*’s digital samples and asserting “that the digital samples model the ‘received signal’, which can equate to the potential signal.” *Final Office Action*, p. 5 (citations omitted).

First, Applicant submits that *Bartkowiak*’s received signal fails to teach, or even suggest, the claimed “potential signal.” Claim 1 requires both “measuring a received signal from the transmitter” and “the probability for a particle indicating likelihood of the potential signal modeled by the particle based upon the received signal.”

Second, even assuming, for the sake of argument, that *Bartkowiak*’s digital samples teach the “particles” and *Bartkowiak*’s received signal teaches the “potential signal,” the reference still fails to disclose “determining a set of particles each modeling a potential signal,” as required by the claim. Digital samples that, when taken together, model the

received signal (*see Final Office Action*, p. 5) do not teach digital samples that each, taken individually, model the received signal.

In the *Advisory Action*, the Examiner responds by stating that “the examiner understands and may even agree with the applicant’s argument to an extent. However, after careful consideration, the limitation is believed by the examiner to not be worded clearly enough in order to match the applicant’s arguments.” *Advisory Action*, p. 2. Thus, the Examiner apparently conceded that, if Claim 1 does, in fact, “match” Applicant’s arguments, then *Bartkowiak* does not teach these claimed aspects.

The Examiner asserts, “[T]he limitation as currently worded still can be read on as a set of particles each modeling one overall potential signal.” *Advisory Action*, p. 2 (emphasis removed). Applicant respectfully disagrees. Claim 1 clearly and unmistakably requires each particle to model a potential signal. While this is perfectly clear from this claim phrase, Applicant notes that Claim 1 also makes this apparent by stating “the potential signal modeled by the particle” and “selecting one of the particles . . . and outputting the potential signal modeled by the selected particle.”

Accordingly, Applicant respectfully submits that *Bartkowiak* fails to teach “determining a set of particles each modeling a potential signal,” as required by Claim 1.

2. *Bartkowiak* fails to teach “redistributing the particles within a space of potential signals that may be generated by the transmitter based upon the probabilities,” as required by Claim 1.

As teaching these claimed aspects, the Examiner points to *Bartkowiak*, column 3, lines 40-55. *Final Office Action*, pp. 2, 6. The Examiner asserts:

[I]t should be obvious to one skilled in the art, that the particles are redistributed and analyzed before a selection takes place. However, the cited passage (see col. 3, ll. 40-55) also shows the process of analyzing all the energy calculations taking place before selection is made of the samples with the highest energy values. Therefore, the above function can also equate “redistributing the particles within a space of potential signals that may be generated by the transmitted based upon the probabilities.”

Id. at p. 6 (sic). Applicant disagrees. The cited portion of *Bartkowiak* merely states:

During the frequency spectrum calculations, the DTMF detector first calculates a portion of the Goertzel algorithm, i.e., calculates the algorithm for a subset of the samples for each frequency, to produce intermediate or interim energy values. The DTMF detector then analyzes the interim accumulated energy values and determines if the energy values are all low values and are substantially similar.

Bartkowiak, col. 3, ll. 40-55. This portion of *Bartkowiak* still fails to teach, expressly or inherently, redistributing anything, much less redistributing the particles within a space of potential signals that may be generated by the transmitter based upon the probabilities. As noted above, the Examiner points to *Bartkowiak*'s digital samples (described on column 3, line 27) as teaching the "particles." *Final Office Action*, p. 5. Accordingly, in order to teach these claimed aspects, *Bartkowiak* would need to teach "redistributing the [digital samples] within a space of potential signals that may be generated by the transmitter." Redistributing digital samples is simply not taught, or even suggested, by the reference.

Applicants respectfully submit that the Examiner's argument that these aspects are inherently taught by *Bartkowiak* fails because the Examiner's statements are conclusory, mischaracterize the teachings of the reference, and are insufficient to meet the burden of proof for establishing inherency. While the Examiner asserts that support for this inherency argument is found at *Bartkowiak*, column 10, lines 7-15 (*Advisory Action*, p. 3), the cited portion of *Bartkowiak* merely explains that when a fixed frame size "is used in the Goertzel algorithm, the frequencies are not optimally aligned at the frequency bins." *Bartkowiak*, col. 10, ll. 7-9. This fails to indicate in any way that *Bartkowiak* inherently teaches "redistributing the particles within a space of potential signals that may be generated by the transmitter," as required by Claim 1.

A showing of inherency has strict legal requirements. To rely on inherency, "the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art." *Ex parte Levy*, 17 U.S.P.Q.2d 1461, 1464 (Bd. Pat. App. & Inter. 1990) (emphasis in original). The Examiner has failed to do so. For this reason alone, the rejection based on inherency fails.

Also, "[t]o establish inherency, the extrinsic evidence must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. . . . The mere fact that a certain thing may result from a given set of circumstances is not sufficient." *In re Robertson*, 169 F.3d 743, 745, 49 U.S.P.Q.2d 1949, 1950-51 (Fed. Cir. 1999). Applicant submits that the lack of reasoning to support the determination of inherency reflects the deficiency of the

teachings in the reference. The “missing descriptive matter” is not necessarily present in *Bartkowiak*, as would be required for a successful rejection based on inherency.

Accordingly, *Bartkowiak* does not describe “redistributing the particles within a space of potential signals that may be generated by the transmitter based upon the probabilities,” as required by Claim 1.

Thus, Applicants respectfully submit that *Bartkowiak* does not describe, expressly or inherently, all limitations required by Claim 1. Likewise, independent Claims 10, 19, and 28 include limitations that, for substantially similar reasons, are not taught by *Bartkowiak*. Accordingly, Applicants respectfully request reconsideration and allowance of Claims 1, 10, 19, and 28 and their respective dependent claims.

CONCLUSION

As the rejections of Claims 1-28 contain clear deficiencies, Applicant respectfully requests a finding of allowance of 1-28. If the PTO deems that an interview is appropriate, Applicant would appreciate the opportunity for such an interview. Although no fees are believed to be currently due, the Commissioner is hereby authorized to charge any fees or credit any overpayments to Deposit Account No. 02-0384 of BAKER BOTTS L.L.P.

Respectfully submitted,

BAKER BOTTS L.L.P.
Attorneys for Applicant



Kurt M. Pankratz
Reg. No. 46,977
(214) 953-6584

Date: April 3, 2007

Customer ID No. 05073